

Sequence Listing

<110> Clark Mr., John
Denning, Chris

<120> Animal Tissue For Xenotransplantation

<130> 730/002

<140> [filed herewith]
<141> 2000-06-13

<150> 60/204,148
<151> 2000-05-15

<160> 51

<170> PatentIn Ver. 2.1

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acggagctca atagaacttg gtacttttgc cttttactct gggaggagag aagcagacga 180
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Glu Gly Ser Leu Phe Trp Ile Asn Pro Ser Arg Asn Pro Glu Val Ser
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Gly Gly Ser Ser Ile Gln Lys Gly Trp Trp Phe Pro Arg Trp Phe Asn
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aat ggt tac caa gaa gaa gat gaa gac gta gac gaa gaa aag gaa caa 421
Asn Gly Tyr Gln Glu Glu Asp Glu Asp Val Asp Glu Glu Lys Glu Gln
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Arg Lys Glu Asp Lys Ser Lys Leu Lys Leu Ser Asp Trp Phe Asn Pro
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Phe Lys Arg Pro Glu Val Val Thr Met Thr Asp Trp Lys Ala Pro Val
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110 115 120
aag cag aaa att acc gtc ggc ctg acg gtt ttc gcc gtc gga aga tac 613
Lys Gln Lys Ile Thr Val Gly Leu Thr Val Phe Ala Val Gly Arg Tyr
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Ile Glu His Tyr Leu Glu Glu Phe Leu Thr Ser Ala Asn Lys His Phe
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gag gtc aag cct gag agg agg tgg cag gac gtc agc atg gtg cgc atg Glu Val Lys Pro Glu Arg Arg Trp Gln Asp Val Ser Met Val Arg Met 190 195 200	805
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 35 40 45
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 65 70 75 80
 Lys Ser Lys Leu Lys Leu Ser Asp Trp Phe Asn Pro Phe Lys Arg Pro
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 Thr Tyr Asn Arg Ala Val Leu Asp Asp Tyr Tyr Ala Lys Gln Lys Ile

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Leu	Asn	Lys	Tyr	Phe	Leu	Leu	Asn	Lys	Pro	Thr	Lys	Ile	Leu	Ser	Pro
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Glu	Tyr	Cys	Trp	Asp	Tyr	His	Ile	Gly	Leu	Pro	Ala	Asp	Ile	Lys	Leu
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 Met Asn Val
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 Val Phe Trp Glu Tyr Ile His Ser Pro Glu Gly Ser Leu Phe Trp Ile
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 Glu Asp Gly Asp Ile Asn Glu Glu Lys Glu Gln Arg Asn Glu Asp Glu
 65 70 75 80
 Ser Lys Leu Lys Leu Ser Asp Trp Phe Asn Pro Phe Lys Arg Pro Glu
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 Tyr Asn Arg Ala Val Leu Asp Asn Tyr Tyr Ala Lys Gln Lys Ile Thr
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 Val Gly Leu Thr Val Phe Ala Val Gly Arg Tyr Ile Glu His Tyr Leu
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 Glu Glu Phe Leu Thr Ser Ala Asn Lys His Phe Met Val Gly His Pro
 145 150 155 160
 Val Ile Phe Tyr Ile Met Val Asp Asp Val Ser Arg Met Pro Leu Ile
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 Glu Leu Gly Pro Leu Arg Ser Phe Lys Val Phe Lys Ile Lys Pro Glu
 180 185 190
 Lys Arg Trp Gln Asp Ile Ser Met Met Arg Met Lys Thr Ile Gly Glu
 195 200 205
 His Ile Val Ala His Ile Gln His Glu Val Asp Phe Leu Phe Cys Met
 210 215 220
 Asp Val Asp Gln Val Phe Gln Asp Lys Phe Gly Val Glu Thr Leu Gly
 225 230 235 240
 Glu Ser Val Ala Gln Leu Gln Ala Trp Trp Tyr Lys Ala Asp Pro Asn
 245 250 255
 Asp Phe Thr Tyr Glu Arg Arg Lys Glu Ser Ala Ala Tyr Ile Pro Phe
 260 265 270
 Gly Glu Gly Asp Phe Tyr Tyr His Ala Ala Ile Phe Gly Gly Thr Pro
 275 280 285
 Thr Gln Val Leu Asn Ile Thr Gln Glu Cys Phe Lys Asp Glu Ser His Leu
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 305 310 315 320
 Asn Lys Tyr Phe Leu Leu Asn Lys Pro Thr Lys Ile Leu Ser Pro Glu
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 Val Ile Val Val Phe Trp Glu Tyr Ile Asn Ser Pro Glu Gly Ser Phe
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 Leu Trp Ile Tyr His Ser Lys Asn Pro Glu Val Asp Asp Ser Ser Ala
 35 40 45

cag aag gac tgg tgg ttt cct ggc tgg ttt aac aat ggg atc cac aat	192
Gln Lys Asp Trp Trp Phe Pro Gly Trp Phe Asn Asn Gly Ile His Asn	
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Tyr Gln Gln Glu Glu Glu Asp Thr Asp Lys Glu Lys Gly Arg Glu Glu	
65 70 75 80	
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Glu Gln Lys Lys Glu Asp Asp Thr Thr Glu Leu Arg Leu Trp Asp Trp	
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Phe Asn Pro Lys Lys Arg Pro Glu Val Met Thr Val Thr Gln Trp Lys	
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Ala Pro Val Val Trp Glu Gly Thr Tyr Asn Lys Ala Ile Leu Glu Asn	
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Tyr Tyr Ala Lys Gln Lys Ile Thr Val Gly Leu Thr Val Phe Ala Ile	
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Gly Arg Tyr Ile Glu His Tyr Leu Glu Glu Phe Val Thr Ser Ala Asn	
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Arg Tyr Phe Met Val Gly His Lys Val Ile Phe Tyr Val Met Val Asp	
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Asp Val Ser Lys Ala Pro Phe Ile Glu Leu Gly Pro Leu Arg Ser Phe	
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Lys Val Phe Glu Val Lys Pro Glu Lys Arg Trp Gln Asp Ile Ser Met	
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Met Arg Met Lys Thr Ile Gly Glu His Ile Leu Ala His Ile Gln His	
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Glu Val Asp Phe Leu Phe Cys Met Asp Val Asp Gln Val Phe Gln Asp	
225 230 235 240	
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His Phe Gly Val Glu Thr Leu Gly Gln Ser Val Ala Gln Leu Gln Ala	
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Trp Trp Tyr Lys Ala Asp Pro Asp Phe Thr Tyr Glu Arg Arg Lys	
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Glu Ser Ala Ala Tyr Ile Pro Phe Gly Gln Gly Asp Phe Tyr Tyr His	
275 280 285	
gca gcc att ttt gga gga aca ccg att cag gtt ctc aac atc acc cag	912
Ala Ala Ile Phe Gly Gly Thr Pro Ile Gln Val Leu Asn Ile Thr Gln	
290 295 300	
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Glu Trp His Asp Glu Ser His Leu Asn Lys Tyr Phe Leu Leu Asn Lys	
325 330 335	
ccc tct aaa atc tta tct cca gaa tac tgc tgg gat tat cat ata ggc	1056
Pro Ser Lys Ile Leu Ser Pro Glu Tyr Cys Trp Asp Tyr His Ile Gly	
340 345 350	
ctg cct tca gat att aaa act gtc aag cta tca tgg caa aca aaa gag	1104

Leu Pro Ser Asp Ile Lys Thr Val Lys Leu Ser Trp Gln Thr Lys Glu
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1131

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35 40 45
Gln Lys Asp Trp Trp Phe Pro Gly Trp Phe Asn Asn Gly Ile His Asn
50 55 60
Tyr Gln Gln Glu Glu Glu Asp Thr Asp Lys Glu Lys Gly Arg Glu Glu
65 70 75 80
Glu Gln Lys Lys Glu Asp Asp Thr Thr Glu Leu Arg Leu Trp Asp Trp
85 90 95
Phe Asn Pro Lys Lys Arg Pro Glu Val Met Thr Val Thr Gln Trp Lys
100 105 110
Ala Pro Val Val Trp Glu Gly Thr Tyr Asn Lys Ala Ile Leu Glu Asn
115 120 125
Tyr Tyr Ala Lys Gln Lys Ile Thr Val Gly Leu Thr Val Phe Ala Ile
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Gly Arg Tyr Ile Glu His Tyr Leu Glu Glu Phe Val Thr Ser Ala Asn
145 150 155 160
Arg Tyr Phe Met Val Gly His Lys Val Ile Phe Tyr Val Met Val Asp
165 170 175
Asp Val Ser Lys Ala Pro Phe Ile Glu Leu Gly Pro Leu Arg Ser Phe
180 185 190
Lys Val Phe Glu Val Lys Pro Glu Lys Arg Trp Gln Asp Ile Ser Met
195 200 205
Met Arg Met Lys Thr Ile Gly Glu His Ile Leu Ala His Ile Gln His
210 215 220
Glu Val Asp Phe Leu Phe Cys Met Asp Val Asp Gln Val Phe Gln Asp
225 230 235 240
His Phe Gly Val Glu Thr Leu Gly Gln Ser Val Ala Gln Leu Gln Ala
245 250 255
Trp Trp Tyr Lys Ala Asp Pro Asp Asp Phe Thr Tyr Glu Arg Arg Lys
260 265 270
Glu Ser Ala Ala Tyr Ile Pro Phe Gly Gln Gly Asp Phe Tyr Tyr His
275 280 285
Ala Ala Ile Phe Gly Gly Thr Pro Ile Gln Val Leu Asn Ile Thr Gln
290 295 300
Glu Cys Phe Lys Gly Ile Leu Leu Asp Lys Lys Asn Asp Ile Glu Ala
305 310 315 320
Glu Trp His Asp Glu Ser His Leu Asn Lys Tyr Phe Leu Leu Asn Lys
325 330 335
Pro Ser Lys Ile Leu Ser Pro Glu Tyr Cys Trp Asp Tyr His Ile Gly
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15 20 25	
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Glu Gly Ser Leu Phe Trp Ile Tyr Gln Ser Lys Asn Pro Glu Val Gly	
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agc agt gct cag agg ggc tgg tgg ttt ccg agc tgg ttt aac aat ggg	195
Ser Ser Ala Gln Arg Gly Trp Trp Phe Pro Ser Trp Phe Asn Asn Gly	
45 50 55 60	
act cac agt tac cac gaa gaa gaa gac gct ata ggc aac gaa aag gaa	243
Thr His Ser Tyr His Glu Glu Glu Asp Ile Ile Gly Asn Glu Lys Glu	
65 70 75	
caa aga aaa gaa gac aac aga gga gag ctt ccg cta gtg gac tgg ttt	291
Gln Arg Lys Asp Asn Arg Gly Leu Pro Leu Val Asp Trp Phe	
80 85 90	
aat cct gag aaa cgc cca gag gtc gtg acc ata acc aga tgg aag gct	339
Asn Pro Glu Lys Arg Pro Glu Val Val Thr Ile Thr Arg Trp Lys Ala	
95 100 105	
cca gtg gta tgg gaa ggc act tac aac aga gcc gtc tta gat aat tat	387
Pro Val Val Trp Glu Gly Thr Tyr Asn Arg Ala Val Leu Asp Asn Tyr	
110 115 120	
tat gcc aaa cag aaa att acc gtg ggc ttg acg gtt ttt gct gtc gga	435
Tyr Ala Lys Gln Lys Ile Thr Val Gly Leu Thr Val Phe Ala Val Gly	
125 130 135 140	
aga tac att gag cat tac ttg gag gag ttc tta ata tct gca aat aca	483
Arg Tyr Ile Glu His Tyr Leu Glu Glu Phe Leu Ile Ser Ala Asn Thr	
145 150 155	
tac ttc atg gtt ggc cac aaa gtc atc ttt tac atc atg gtg gat gat	531
Tyr Phe Met Val Gly His Lys Val Ile Phe Tyr Ile Met Val Asp Asp	
160 165 170	
atc tcc agg atg cct ttg ata gag ctg ggt cct ctg cgt tcc ttt aaa	579
Ile Ser Arg Met Pro Leu Ile Glu Leu Gly Pro Leu Arg Ser Phe Lys	
175 180 185	
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Val Phe Glu Ile Lys Ser Glu Lys Arg Trp Gln Asp Ile Ser Met Met	
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cgc atg aag acc atc ggg gag cac atc ctg gcc cac atc cag cac gag	675
Arg Met Lys Thr Ile Gly Glu His Ile Leu Ala His Ile Gln His Glu	
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Val Asp Phe Leu Phe Cys Met Asp Val Asp Gln Val Phe Gln Asn Asn	
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Phe Gly Val Thr Leu Gly Gln Ser Val Ala Gln Leu Gln Ala Trp	
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Trp Tyr Lys Ala His Pro Asp Glu Phe Thr Tyr Glu Arg Arg Lys Glu	
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Ser Ala Ala Tyr Ile Pro Phe Gly Gln Gly Asp Phe Tyr Tyr His Ala	
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gcc att ttt ggg gga aca ccc act cag gtt cta aac atc act cag gag	915
Ala Ile Phe Gly Gly Thr Pro Thr Gln Val Leu Asn Ile Thr Gln Glu	
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tgc ttc aag gga atc ctc cag gac aag gaa aat gac ata gaa gcc gag	963
Cys Phe Lys Gly Ile Leu Gln Asp Lys Glu Asn Asp Ile Glu Ala Glu	
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 Asn Leu Val Arg Asn Asn Ile
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 Asn Asn Ile
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gat ctc cat gtc aac aag atc tcc atg tca aga tcc aag tca gaa aca 342
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Val Phe Trp Glu Tyr Val Asn Arg Ile Pro Glu Val Gly Glu Asn Arg
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agt tat caa gaa gac aac gta gaa gga cgg aga gaa aag ggt aga aat 582
Ser Tyr Gln Glu Asp Asn Val Glu Gly Arg Arg Glu Lys Gly Arg Asn
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Gly Asp Arg Ile Glu Glu Pro Gln Leu Trp Asp Trp Phe Asn Pro Lys
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aac cgc ccg gat gtt ttg aca gtg acc ccg tgg aag cgc ccg att gtg 678
Asn Arg Pro Asp Val Leu Thr Val Thr Pro Trp Lys Ala Pro Ile Val
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Glu His Tyr Leu Glu Asp Phe Leu Glu Ser Ala Asp Met Tyr Phe Met
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Val Gly His Arg Val Ile Phe Tyr Val Met Ile Asp Asp Thr Ser Arg
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 Tyr His Ala Ala Ile Phe Gly Gly Thr Pro Thr His Ile Leu Asn Leu
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 <213> Homo sapiens

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Val Ala Tyr	Ile Pro Phe Gly Gln	Gly Asp Phe Tyr Tyr His Ala Ala
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<212> DNA

<213> Ovis sp.

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<210> 17

<211> 815

<212> DNA

<213> Ovis sp.

<400> 17

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<210> 18

<211> 11034

<212> DNA

<213> Ovis sp.

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<210> 19
<211> 1813
<212> DNA
<213> Ovis sp.

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<400> 19
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<210> 20
<211> 1379
<212> DNA
<213> Ovis sp.

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<400> 20
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<210> 21
<211> 1973
<212> DNA
<213> Ovis sp.

<400> 21
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tatattatca gtgcaaaaac acaaatctgt caagccatgg aagagataga ggaacttaat 1920
gcatattatt aagtaaagaa accatctgaa agattgctg ctgtcagatt cca 1973

<210> 22
<211> 920
<212> DNA
<213> Ovis sp.

<400> 22
agggaacaaa agctgggtac gatatacatc atagtgaaaa atacttgtca ttacatattt 60
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<210> 23
<211> 650
<212> DNA
<213> Ovis sp.

<400> 23
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agaggaagca aaaagcctct caccacaggc ctggaatgtt tccaccaat 650

<210> 24
<211> 705
<212> DNA
<213> Ovis sp.

<400> 24
tataatgtgg ttagaaataa cgtctgactt tgtgccagta cttttttgaa ttgagagag 60
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aactaacaaa agaccaacac agcaagtaca cattatttct ccttgtaaca ttgagccttg 180
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ctccaagtaa gttggccatg aaataagcaa agagagagta gaaag 705

<210> 25
<211> 900
<212> DNA
<213> Ovis sp.

<400> 25
tactcacaag tgtgaaacac catagaaggc atgaatacat aataaatgat gcataccttt 60
taaagagaga aagctagggt aagtggggat ctactgttca agtctcaggg attcaaaccc 120
agcactgtct gactctaaat cctttgttct ttccacagct caagtctttc tctttcaaac 180
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<210> 26
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Probes and PCR
Primers

<400> 26
gagaaaataa tgaatgtcaa agga 24

<210> 27
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Probes and PCR
Primers

<400> 27
tgataatccc agcagtattc 20

<210> 28
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Probes and PCR

Primers

<400> 28
cttgatgggt ttatccagaa ca 22

<210> 29
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Probes and PCR
Primers

<400> 29
ctgtggatat attcccaaaa cac 23

<210> 30
<211> 95
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Probes and PCR
Primers

<400> 30
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ctgtcattgt tgtgttttgg gaatatatcc acagg 95

<210> 31
<211> 95
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Probes and PCR
Primers

<400> 31
aattcctgtg gatatatcc caaaacacaa caatgacagt tgagacaacc agcattgaca 60
gaatcacttt tcttttgaca ttcattatct tctcg 95

<210> 32
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Probes and PCR
Primers

<400> 32
gggtggttcc gagatggttt aaca 24

<210> 33
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Probes and PCR
Primers

<400> 33
gggttgaacc agtccgatag cttta 24

<210> 34
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Probes and PCR
Primers

<400> 34
tccaggatgc ctttgataga g 21

<210> 35
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Probes and PCR
Primers

<400> 35
gggaggaagc gaaggtgca 19

<210> 36
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Probes and PCR
Primers

<400> 36
acgtggctcc aagaattctc caggcaagag tactgg 36

<210> 37
<211> 49
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Probes and PCR
Primers

<400> 37
catcttggtc aatggccgat cccattattt tctctggga aaagaaaag 49

<210> 38
<211> 49
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Probes and PCR
Primers

<400> 38
cttttctttt cccaggagaa aataatggga tcggccattg aacaagatg 49

<210> 39
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Probes and PCR
Primers

<400> 39
caggtcgacg gatccgaaca aac 23

<210> 40
<211> 47
<212> DNA
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<220>
<223> Description of Artificial Sequence: Probes and PCR
Primers

<400> 40
cagatctaac gaggattcaa tgtcaaagga aaagtgattc tgtcaat 47

<210> 41
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
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Primers

<400> 41
ctgaactgaa tgtttatcca ggccatc 27

<210> 42
<211> 51
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Probes and PCR
Primers

<400> 42
ggcgaccgtg ggcttgtagt cggtcattat ttctctctgg gaaaagaaaa g 51

<210> 43
<211> 34
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Probes and PCR
Primers

<400> 43
gagaaaataa tgaccgagta caagcccacg gtgc 34

<210> 44
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Probes and PCR
Primers

<400> 44
ctgggggatcc agacatgata agatac 26

<210> 45
<211> 24
<212> DNA
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<223> Description of Artificial Sequence: Probes and PCR
Primers

<400> 45
ctgggttggtt ctagaacagg agga 24

<210> 46
<211> 66
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Probes and PCR
Primers

<400> 46

catcttggttc aatggccgat cccattcttc ctctctctcc actgggtgaca aaacagagtc 60
catgag 66

<210> 47

<211> 66

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Probes and PCR
Primers

<400> 47

ctcatggact ctgttttggc accagtggag gaggaggagg aatgggatcg gccattgaac 60
aagatg 66

<210> 48

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Probes and PCR
Primers

<400> 48

caggtcgacg gatccgaaca aac 23

<210> 49

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Probes and PCR
Primers

<400> 49

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<210> 50

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Probes and PCR
Primers

<400> 50

ctgaactgaa tgtttatcca ggccatc 27

<210> 51

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Probes and PCR
Primers

<400> 51

agccgattgt ctgttggtgcc cagtcac 27

* * * * *

It is understood that certain adaptations of the description and illustrations provided in
5 this disclosure are a matter of routine optimization for those skilled in the art, and can be
implemented without departing from the spirit of the invention, or the scope of the appended
claims.